

bio**sera**

The serum professionals



bio**sera**

Fetal Bovine Serum



Production Process of FBS

Biosera FBS is derived from blood, collected aseptically using a closed sterile bag system. The blood is immediately centrifuged and the serum frozen for transfer to our processing facilities. On receipt at the processing plant, the serum is thawed, tested for acceptability, pooled and passed through three 100nm (0.1um) filters. The serum is bottled in our class 10,000 cleanroom in a class 10 hood.

Full Traceability

For all batches we have full recorded traceability. Our labelling system is computerised and designed for batch-to-batch clarity and we monitor the movement of each batch through treatment and production to final packaging.

Testing

Biosera vigorously tests serum for sterility, mycoplasma, specific viruses and the ability to support cell growth. Certified and special certified sera are subject to a battery of further tests including chemical components, protein electrophoresis and radial immunodiffusion. See example of a certificate of analysis on following page.

Sterility

All sera are tested for the absence of bacteria (under aerobic and anaerobic conditions) and fungi. The tests are carried out over 15 days.

Mycoplasma

Serum is tested for mycoplasma by inoculation of mycoplasma test broth followed by subculturing into 3T3 cell mono layers and mycoplasma test agar plates. The cells are incubated and stained and visually examined for the presence of mycoplasma.

Viruses

All of our serum is tested for Bovine Viral Diarrhoea (BVD), Infectious Bovine Rhinotracheitis (IBR), Parainfluenza Type 3 (PI3)

Sera are tested for the absence of the indicated viruses using cultures that are grown for a minimum of 21 days in medium supplemented with 15% test serum. They are subcultured at least twice during this period. Positive control cultures that have been inoculated with viruses are tested in parallel. Test cultures must have a result of non-detection for cytopathic observations, fluorescent antibody staining, inclusion body staining and haemadsorption. The test is an Elisa test out of pooled batches of final filtered products.

Endotoxin

Endotoxin testing standard against which the endotoxin levels are measured is standardised by USP reference endotoxin standard LAL method.

BSE

Raw material collected from cows over 30 months in the EU must be screened for BSE. The mother bovine are systematically tested by the veterinary service for the presence of prions in the brain which is the only part of the animal where prions are concentrated enough to be detected. Only batches from sources shown to be free of BSE are then used. Other EU approved sera comes from BSE free regions (see Origins of FBS table)

Cell Culture

Biological performance is assessed using cell culture medium supplemented with the serum being tested at a final concentration of 10%. During the test period, cultures are examined microscopically for any morphological abnormalities that may indicate toxic components in the serum. Cell growth, plating efficiency and cloning efficiency are tested on any of the following cell lines - HeLa, L929, SP2/O-AG8, MRC-5, CHO and BHK.

Origins of FBS



With breakouts of viral diseases in animals becoming prevalent around the world, it has become more important than ever to know the source of the sera and the risk levels of that Country. The SSC have researched many countries and listed them with a Geographical BSE Rating (GBR). See tabulation below for definitions:

| GBR Status | Presence of one or more cattle clinically or pre-clinically infected with the BSE agent in a region or Country |
|------------|--|
| I | Highly Unlikely |
| II | Unlikely but not excluded |
| III | Likely but not confirmed or confirmed at a low level |
| IV | Confirmed at a higher level |

To interpret the above table, the "cleanest" areas are those that have a GBR I rating.

Main Origins of Today's FBS Supplies and their GBR Status

| | |
|---|-----|
| Australia | I |
| Canada | III |
| Costa Rica | II |
| Denmark | III |
| France | III |
| Mexico | III |
| New Zealand | I |
| South America (Argentina, Brazil, Chile, Paraguay, Uruguay) | I |
| USA | III |

All information regarding the Geographical BSE status has been taken from the European Commissions Scientific Steering Committee reports from the following websites and was correct information at the time of print.

http://europa.eu.int/comm/food/fs/sc/ssc/outcome_en.html#reports

http://www.efsa.eu.int/press_room/press_release/575_en.html

Certified, Special Certified and Qualified FBS



Certified Serum

Certified FBS is our traditional, high quality FBS and meets the requirements of the most discriminating FBS users. Over 50 tests are carried out and recorded on the Certificates of Analysis. Certificates can be downloaded from our website: www.biosera.com.

| Product Code | Country of Origin |
|--------------|---|
| S1520 | North America |
| S1600 | Central America |
| S1700 | Australia |
| S1750 | Denmark |
| S1810 | South America (Paraguay, Uruguay, Chile, Brazil, Argentina, Columbia) |
| S1820 | France |

Note: All mother bovine from France and Denmark over the age of 30 months are tested for BSE.

Special Certified Serum

Biosera offers specially treated/tested Certified FBS to meet customers' specific requirements. If you require a treatment not listed here, please contact your local Biosera office or Distributor. Special Certified serum is available from all the origins listed above.

Charcoal Stripped FBS

Product codes: S152F, S160F, S170F, S175F, S181F, S182F

Double Charcoal Stripped FBS

Product codes: S152X, S160X, S170X, S175X, S181X, S182X

FBS treated with charcoal activated dextran has reduced levels of various hormones and other factors, making it useful for assaying cells used in receptor and other signal related studies

Dialysed FBS

Product codes: S152D, S160D, S170D, S175D, S181D, S182D

FBS is dialysed against an osmo-equivalent saline solution using membranes with a cut-off rated at 12,000 Daltons (previously 10,000 Daltons). The concentration of small components such as ions, salts, nucleotides, amino acids, vitamins, some hormones and other metabolites is substantially reduced.

Certified, Special Certified and Qualified FBS Cont.

Stem Cell Tested FBS

Product codes: S152S, S160S, S170S, S175S, S181S, S182S

Our highest quality FBS lots are screened for use with stem cells. Using cells specifically grown by a leading stem cell company, we assay these lots for growth rate, plating efficiency, colony morphology and toxicity.

Low IgG FBS

Product codes: S152I, S160I, S170I, S175I, S181I, S182I

The level of IgG in FBS is normally low but can increase significantly if there has been an immune challenge to the mother. By screening each sample of FBS with an IgG ELISA we identify and pool those samples with very low levels of IgG. Low IgG FBS is especially useful for the production of monoclonal antibodies. The purification of some target proteins can also be improved by the use of Low IgG FBS. By sourcing naturally low IgG FBS, Biosera avoids the need to chemically treat the serum maintaining a higher quality and simplifying customers' regulatory process.

Low Lipid FBS

Product codes: S152L, S160L, S170L, S175L, S181L, S182L

Cholesterol, Triglycerides and Phospholipids are removed by treating the FBS with a product called Liposorb.

Gamma Irradiated FBS

Product codes: S152G, S160G, S170G, S175G, S181G, S182G

Serum is λ -irradiated by a ^{60}Co source with 25kGy to eliminate mycoplasma and λ -radiation sensitive viruses.

Tetracycline Free Fetal Bovine Serum

Product codes: S152T, S160T, S170T, S175T, S181T, S182T

Biosera tests batches of sera for the absence of Tetracycline.

Qualified Fetal Bovine Serum

Product code: S1900 (old code S1870)

For customers working with robust cells or under budget constraints, Biosera offers Qualified serum. Qualified serum is processed similarly to Certified FBS but does not undergo the same level of testing. All serum is routinely tested for sterility, mycoplasma and viruses but the Qualified serum is only tested for its cell growth properties. The lowered cost associated with producing this serum allows Biosera to offer it at a discount.

Definitions



| | |
|---------------------------|---|
| Animal Free | Does not contain materials of animal origin. |
| BSE: | Bovine Spongiform Encephalopathy is a disease affecting the central nervous system |
| Calcium Depleted: | The product has reduced levels of calcium |
| Charcoal Treated: | The product has been treated with charcoal/dextran, reducing the level of some hormones |
| Country of Origin: | The country or region in which the donor/animal serum was harvested |
| Dialysed: | The product has been dialysed with a cut off of 10,000 or 12,000 Daltons against an osmo-equivalent saline solution |
| EC Approved: | Meets with European Community requirements for production or importation of sera within the European Community |
| Gamma Irradiated: | Treatment with λ -radiation to inactivate certain viruses |
| Heat Inactivation: | Incubated at 56oC for 30 minutes to inactivate the compliment cascade |
| Low Lipid: | The level of lipids and lipoproteins is reduced by treatment |
| Low IgG: | The serum has levels of IgG below 5mg/ml |
| NCCC Guidelines: | Many of our test methods are based on the guidelines set by the National Cell Culture Centre |
| Source: | The Country or region in which the donor/animal serum was harvested |
| USDA Approved: | Used to describe a source that meets USDA (United States Department of Agriculture) importation requirements |
| Virus Tested: | The product has been tested for the viral groups noted on the product analysis |

Other Sera Types

For more information on the sera below, please contact your local Biosera office or one of our many distributors. All the information is also available to download from our website, www.biosera.com

| Product | Code |
|----------------------------------|---------------------|
| • Bovine Serum | S0250, S0270, S0600 |
| • Bull Serum | S1400 |
| • Calf Serum | S0200, S0400 |
| • Cat Serum | S2800 |
| • Chicken Serum | S0500 |
| • Dog Serum | S2900 |
| • Donkey Serum | S2170 |
| • Donor Bovine Serum | S0600 |
| • Donor Calf Serum | S0100, S0150 |
| • Fetal Horse Serum | S0960 |
| • Goat Serum | S2000 |
| • Guinea Pig Serum | S2450 |
| • Horse Serum | S0900, S0910 |
| • Lamb Serum | S2300 |
| • Mouse Serum | S2160, S2161 |
| • New Born Calf Serum | S0700, S0750 |
| • Pig Serum | S2400 |
| • Rabbit Serum | S2500, P6130 |
| • Rat Serum | S2150 |
| • Sheep Serum | S2350, P6120 |
| • Pregnant Horse Serum | S0950 |

The above sera can also be specially treated.
All sera is stored at -20oC, presented frozen, shelf life 48 months

Synthetic Media, Powdered and Liquid: Standard Media

Biosera media formulations are manufactured following original publications; standards set by the Tissue Culture Association and accepted formulations. These formulations may vary from these standards by substituting hydrated, chlorinated and/or the salt forms of certain compounds where such substitutions contribute to improved performance of the product.



Custom Made Formulations

The realisation and production of your personalised cell culture media compositions is another of our services. Let us know the components needed and the quantities that correspond and we will produce this to your requirements. There may be a short delay for this service.

Quality Assurance

The media formulations are computerised and each batch is generated for weight and batch number. All of the chemicals, raw materials and equipment that we use is of the highest quality. All new batches of chemicals are introduced in the process after stringent QC.

The water used for media preparation is of the best quality. It is of WFI quality, produced in several steps including centrifugal distillation. The conductivity is measured in line and the water is always freshly processed and cooled down to 20 °C before adding the powder.

Equipment and Conditions

All equipment used for the manufacturing of powdered and liquid media are made of chemical inert materials, which will not contaminate the final product.

Humidity and temperature are controlled constantly to guarantee that all chemicals are ground into fine powder. Being passed twice through 0.2/0.1 µm pore size sterile filters carries out the liquid media sterilisation.

Batch Size

Batch sizes for powdered media range from 1 to 10,000 Litres, for liquid media from 1 to 2,000 Litres.



End Product Testing

Samples of powder and liquid media are tested physically for osmotic effects and pH. Osmolarity is determined by means of the freezing point method. The chemical composition and the homogeneity of the mixture of the components are controlled by analysis of glucose in the sample. Biological performance testing is done on different cell lines. Endotoxin testing is performed using the Limulus Amoebocyte test.

Storage and Stability

Powdered media are stable for 3 years when stored at 2-8 °C in their original containers and in dry, dark conditions. Heat, light and humidity can greatly effect the performance of powdered media therefore we recommend that powder be stored correctly if not used entirely. All liquid media formulation are stable for up to 2 years. They must be stored at 2-8 °C in the dark. Media concentrates are stored at 8-10 °C and are stable for 1 year at the original pH.

Advantages and Use of Powdered Tissue Culture Media

While liquid media are convenient to use, there are several drawbacks which makes powdered media also attractive.

1. Long term studies can be carried out using a single batch of powdered medium.
2. Storage time up to four years.
3. Reduces the unit costs by 3-10 times.
4. Storage space is greatly reduced.

Advantages of Liquid Media

1. Lower labour costs.
2. Quality control and functional testing.
3. Stock organisation is easier to control.

The protocols of all steps during processing and all final test results reassure the customer that each batch meets the criteria for production, has passed all test criteria and has been manufactured to the product specifications.

The retained samples allow also the testing of long-term shelf-life studies and also controls in response to customer inquiries.

Preparation Instructions for Powdered Media

Powdered media are extremely hygroscopic and should be protected from atmospheric moisture. The entire contents of each package should be closed immediately after opening. Preparing a concentrated solution of medium is not recommended as precipitates may form.

Supplements can be added prior to filtration or introduced aseptically to sterile medium. The nature of the supplements may affect storage conditions and shelf life of the medium.

- 1 Measure out 90% of initial required volume of water. Water temperature should be 15 - 20°C.
- 2 While gently stirring the water, add the powdered medium. Stir until dissolved. Do not heat.
- 3 Rinse original package with small amount of water to remove all traces of Powder. Add to solution in step 2.
- 4 Supplementation of the medium after your needs.
- 5 While stirring, adjust the pH of the medium to 0.1 - 0.3 pH units below the desired pH since it may rise during filtration. The use of 1N CL or 1N NaOH is recommended.
- 6 Add additional water to bring the solution to final volume.
- 7 Sterilize immediately by filtration using a membrane with a porosity of 0.22 microns or less.
- 8 Aseptically dispense medium into sterile container add desired quantity sodium bicarbonate in water for tissue culture use. (see table page 73)

Product Storage

Store the dry powdered medium at 2-8°C under dry conditions and liquid medium at 2- 8°C in the dark.

Any or all of the following may recognize deterioration of the powdered medium:

- colour range
- granulation/ clumping
- insolubility

Deterioration of the following into liquid media

- pH change
- precipitate or particulate matter throughout the solution
- cloudy appearance
- colour change.

The nature of supplements added may affect storage conditions and shelf life of the medium. Product label bears expiration date.

Product Codes and Description

For compositions of the following media products please visit www.biosera.com.

Unless otherwise stated - liquid:

Storage: +4°C

Life: 24 months w/o L-Glutamine

Life: 12 months w/ L-Glutamine

Unless otherwise stated – powder:

Storage: +4°C

Life: see individual products



BME Basal Media Eagle

For diploid or primary cell cultures. It is the simplest of the basal media with all the essential components for growth. BME ideally supports cell lines such as HeLa, L-cells and primary mammalian fibroblasts.

- L0042** BME w/ Earle's Salts w/o L-Glutamine
- L0043** BME w/ Earle's Salts w/ L-Glutamine
- L0044** BME w/ Earle's Salts w/ 25mM HEPES w/o L-Glutamine
- L0045** BME w/ Earle's Salts w/ L-Glutamine w/ 25 mM HEPES
- L0046** BME w/ Hanks' Salts w/o L-Glutamine
- P0030** BME w/ Earle's salts w/ L-Glutamine w/o Na Bicarbonate (48 months)
- P0031** BME w/ Hanks' salts w/ L-Glutamine w/o Na Bicarbonate (48 months)
- X0026** BME 10X w/ Hanks' Salts w/o L-Glutamine w/o Na Bicarbonate
- X0042** BME 10X w/ Earle's Salts w/o L-Glutamine w/o Na Bicarbonate
- X0552** BME Amino Acids 100X w/o L-Glutamine
- X0555** BME Vitamins 100X w/o L-Glutamine
Storage: -20°C Life: 24 months Presentation: Frozen

CMRL

A media developed by Connaught Medical Research Laboratories.

Can be used for cloning monkey kidney cells and growing other mammalian cell types in cultures.

- L0053** CMRL 1066 Media w/o L-Glutamine
- P0058** CMRL w/ L-Glutamine w/o Na Bicarbonate (36months)

Product Codes and Description

DMEM

Dulbecco's Modified Eagles Media

For supporting and maintaining a vast range of mammalian cell types

DMEM Low Glucose (= 1,0g/L)

- L0060 DMEM Low Glucose w/ L-Glutamine w/ Na Pyruvate
- L0064 DMEM Low Glucose w/o L-Glutamine w/ Na Pyruvate
- L0065 DMEM Low Glucose w/ L-Glutamine w/ Na Pyruvate w/ 25 mM HEPES
- L0066 DMEM Low Glucose w/ stable L-Glutamine w/ Na Pyruvate
- L0067 DMEM Low Glucose w/o L-Glutamine w/ Na Pyruvate w/ 25 mM HEPES
- L0070 DMEM Low Glucose w/ Na- Pyruvate w/o Na Bicarbonate
- P0061 DMEM Low Glucose w/ L-Glutamine w/ Na Pyruvate w/o Na Bicarbonate (36 months)

DMEM High Glucose (= 4,5g/L)

- L0100 DMEM High Glucose w/o L-Glutamine w/ 25mM HEPES
- L0101 DMEM High Glucose w/o L-Glutamine w/o Na Pyruvate
- L0102 DMEM High Glucose w/ L-Glutamine w/o Na Pyruvate
- L0103 DMEM High Glucose w/ stable L-Glutamine w/ Na Pyruvate
- L0104 DMEM High Glucose w/ L-Glutamine w/ Na Pyruvate
- L0106 DMEM High Glucose w/o L-Glutamine w/ Na- Pyruvate
- L0107 DMEM High Glucose w/25mM HEPES w/ stable Glutamine
- P0102 DMEM High Glucose w/ L-Glutamine w/ Na Pyruvate w/o Na Bicarbonate (36 months)
- P0103 DMEM High Glucose w/ L-Glutamine w/o Na Pyruvate w/o Na Bicarbonate (36 months)

Product Codes and Description

DMEM - Ham's F12

Offers excellent performance for certain epithelial, endothelial and granulose cell types. With proper supplementation it is a highly successful basic media for serum free cell culture

- L0090 DMEM – Ham's F12 w/o L-Glutamine w/o HEPES
- L0091 DMEM – Ham's F12 w/o L-Glutamine w/o HEPES w/o Glucose
- L0092 DMEM – Ham's F12 w/ stable L-Glutamine w/15mM HEPES
- L0093 DMEM – Ham's F12 w/L-Glutamine w/15mM HEPES
- L0094 DMEM – Ham's F12 w/o L-Glutamine w/15mM HEPES
- L0095 DMEM – Ham's F12 w/ L-Glutamine w/25mM HEPES
- L0096 DMEM –Ham's F12 w/o L-Glutamine w/25mM HEPES
- P0095 DMEM Ham's F12 w/ L-Glutamine w/ 15mM HEPES w/o Na Bicarbonate (36 months)

F10 Nutrient Medium (Ham's F10)

To support the growth of Chinese Hamster Ovary Cells under serum free conditions and other mammalian cell types with serum supplementation. It's a popular medium for growth of fastidious cell lines.

- L0130 Ham's F10 w/ L-Glutamine w/ 25mM HEPES
- L0140 Ham's F10 w/L-Glutamine
- L0145 Ham's F10 w/o L-Glutamine
- X0150 Ham's F10 10X concentrate w/ L-Glutamine w/o Na Bicarbonate
- P0146 Ham's F10 w/ L-Glutamine w/o Na Bicarbonate (36 months)

F12 Nutrient Medium (Ham's F12)

Ham's F12 medium was originally developed for single-cell plating of near diploid cells. It is a rich modification of F10 medium designed for the cloning and serial propagation of CHD-3 and CHL-1 cell lines in the absence of serum. It also offers enhanced performance for cells growing at low density. F-12 features increased levels of choline, l-inositol, putrescine and several amino-acids. It is excellent for cultivating carcinoma cells, rat skeletal myoblasts, lung cells and rat, rabbit or chicken embryos

- L0132 Ham's F12 w/ L-Glutamine w/ 25mM HEPES
- L0133 Ham's F12 w/o L-Glutamine w/25mM HEPES
- L0135 Ham's F12 w/ L-Glutamine
- L0136 Ham's F12 w/o L-Glutamine
- X0155 Ham's F12 10X concentrate w/o L-Glutamine w/o Na Bicarbonate
- P0134 Ham's F12 w/ L-Glutamine w/o Na Bicarbonate (36 months)

F14 Nutrient Medium (Ham's F14)

- L0138 Ham's F14 w/ 6g/L Glucose & 1mg/L ATP

Product Codes and Description

Fishers Medium

Formulated to support cell propagation from leukaemic mice

P0105 Fishers medium w/ L-Glutamine w/o Na Bicarbonate (24 months)

Glasgow MEM BHK 21

MEM modified to support the growth of BHK-21 cells. Developed by adding 10% tryptose phosphate broth and twice the concentration of amino acids and vitamins to Eagle's BME. Used to study cell competence from genetic Factors

L0221 Glasgow MEM BHK 21 w/ L-Glutamine w/o Tryptose Phosphate Broth

X0122 Glasgow MEM BHK 21 10Xw/ L-Glutamine w/o Tryptose Phosphate Broth

X0123 Glasgow MEM BHK 21 10X w/o L-Glutamine w/o Tryptose Phosphate Broth

P0120 Glasgow MEM BHK 21 w/ L-Glutamine w/o Na Bicarbonate w/o Tryptose Phosphate Broth (36 months)

Iscoves Modified Dulbecco's Medium (IMDM)

Iscoves media are enriched modifications of DMEM containing sodium selenite. They are excellent for rapidly proliferating high-density cell cultures. The addition of BSA, purified human transferrin and soybean lecithin creates serum free condition ideal for supporting B and T lymphocytes. IMDM was the first media utilising HEPES buffer. Other cell types can be cultured using this medium under serum free or reduced serum conditions.

L0190 IMDM w/o L-Glutamine w/25mM HEPES

L0191 IMDM w/ stable L-Glutamine w/25mM HEPES

L0192 IMDM w/o L-Glutamine w/o HEPES

P0191 IMDM w/o Na Bicarbonate w/ L-Glutamine w/25mM HEPES (36 months)

P0192 IMDM w/ L-Glutamine w/25mM HEPES w/o phenol red (36 months)

Liebowitz Media

This media supports cell lines such as Hep-2 and MMC-MK2 and primary explants of embryonic and adult human tissue

L0300 Liebowitz media w/o L-Glutamine

P0350 Liebowitz L 15 w/ L-Glutamine (36 months)

Product Codes and Description

McCoy's 5A

McCoy's media was originally formulated for growth and supporting of lymphocytes. This final modification produced a media identical to RPMI 1629. McCoy's 5A support the indefinite proliferation of Walker 256 carcinoma cells. In addition, it is excellent for the propagation of leukocytes, biopsy tissues, a broad range of human, rat normal and transformed cell types and the most demanding primary and continuous cell lines.

- L0210** McCoy's 5A w/ L-Glutamine
- L0211** McCoy's 5A w/o L-Glutamine
- P0390** McCoy's 5A w/L-Glutamine w/o Na Bicarbonate (36 months)

Medium 199

This complex medium was originally developed specifically for nutritional research of chicken fibroblasts. Today, 199 media are widely used for the maintenance of non-transformed cells, vaccine and virus production and primary explants of epithelial cells.

- L0320** Medium 199 w/Earle's salts w/ L-Glutamine w/1.25g Na Bicarbonate
- L0330** Medium 199 w/ Hanks' salts w/ L-Glutamine
- L0331** Medium 199 w/ Hanks' salts w/ L-Glutamine w/25mM HEPES
- L0355** Medium 199 w/ Earle's modified salts w/ L-Glutamine
- L0356** Medium 199 w/Earle's modified salts w/o L-Glutamine
- L0360** Medium 199 w Earle's modified salts w/ L-Glutamine w/25mM HEPES
- X0356** Medium 199 10X concentrate w/Earle's modified salts w/o L-Glutamine w/o Na Bicarbonate
- P0410** Medium 199 modified w/ Hanks' salts w/o L-Glutamine w/o Na Bicarbonate (36 months)
- P0420** Medium 199 w/ Earle's w/ L-Glutamine w/o Na Bicarbonate (36 months)
- P0425** Medium 199 w/ Earle's salts w/ L-Glutamine w/25mM HEPES w/o Na Bicarbonate (36 months)

Product Codes and Description

MEM

Minimum Essential Media

A modification of BME featuring increased amino acid levels to more closely resemble the protein content of human cells. MEM serves as a general used medium ideal for the growth and maintenance of a wide range of mammalian cell types. Often used to support anchorage-dependent cells, however modified solutions can be used to support other cell types including calcium-free MEM for suspension cultures and MEM with Hanks' salts for diploid cells.

| | |
|-------|--|
| L0415 | MEM w/Earle's salts w/ L-Glutamine |
| L0416 | MEM w/ Earle's salts w/ stable L-Glutamine |
| L0430 | MEM w/Earle's salts w/ NEAA w/o L- Glutamine |
| L0440 | MEM w/ Earle's salts w/o L-Glutamine |
| L0444 | MEM w/Earle's salts w/ L-Glutamine w/ 25mM HEPES |
| L0445 | MEM w/Earle's salts w/o L-Glutamine w/ 25mM HEPES |
| L0465 | MEM w/ Hanks' salts w/o L-Glutamine |
| L0470 | MEM w/ Hanks' salts w/ 25mM HEPES w/o L-Glutamine |
| L0475 | MEM Alpha w/ L-Glutamine w/o Ribonucleosides w/o Deoxyribonucleosides |
| L0476 | MEM Alpha w/o L-Glutamine w/o Ribonucleosides w/o Deoxyribonucleosides |
| X0311 | MEM 10X w/Earle's salts w/o L-Glutamine w/o Na Bicarbonate |
| X0321 | MEM 10X w/ Hanks' salts w/o L-Glutamine w/o Na Bicarbonate |
| X0554 | MEM Amino acids 50X concentrate w/o L-Glutamine |
| X0556 | MEM Vitamins 100X concentrate w/o L-Glutamine |
| X0557 | MEM non-essential amino acids (NEAA) 100X concentrate w/o L-Glutamine |
| P0440 | MEM Alpha modification w/ Earle's salts w/ L-Glutamine w/o Na Bicarbonate (24 months) |
| P0450 | MEM w/Earle's salts w/ L-Glutamine w/NEAA w/o Na Bicarbonate (36 months) |
| P0451 | MEM w/ Earle's salts w/ L-Glutamine w/o NEAA w/o NA Bicarbonate (24 months) |
| P0452 | MEM Eagle w/ Earle's salts w/ L-Glutamine w/ 25mM Hepes w/o Na Bicarbonate (36 months) |
| P0460 | MEM Autoclavable w/ Earle's w/o L-Glutamine w/o Na Bicarbonate (36 months) |
| P0515 | MEM w/Hanks' salts w/ L-Glutamine w/o Na Bicarbonate (36 months) |

Product Codes and Description

RPMI 1640

RPMI are general-purpose enriched media with extensive applications for a vast range of mammalian cells incl human myeloma, mouse hybridoma, human leukocytes and B and T lymphocytes. It was originally formulated for suspension cultures and monolayer culture of human leukemic cells.

- L0490** RPMI 1640 w/o L-Glutamine w/25mM HEPES
- L0492** RPMI 1640 w/20mM HEPES Dutch modification 1g/L Na Bicarbonate
- L0495** RPMI 1640 w/ L-Glutamine w/25mM HEPES
- L0496** RPMI 1640 w/25mM HEPES w/ stable L-Glutamine
- L0498** RPMI 1640 w/stable L-Glutamine
- L0500** RPMI 1640 w/ L-Glutamine
- L0501** RPMI 1640 w/o L-Glutamine
- L0503** RPMI 1640 w/o Folic Acid w/o L-Glutamine
- L0505** RPMI 1640 w/o L-Glutamine w/o phenol red
- P0860** RPMI 1640 w/ L-Glutamine w/o Na Bicarbonate (36 months)
- P0870** RPMI 1640 w/o L-Glutamine w/o Na Bicarbonate (36 months)
- P0871** RPMI 1640 w/o L-Glutamine w/o Na Bicarbonate w/o Phenol Red (48 months)
- P0875** RPMI 1640 w/o L-Glutamine w/ 25 mM HEPES w/o Na Bicarbonate (48 months)
- P0876** RPMI 1640 w/ L- Glutamine w/ 25 mM HEPES w/o Phenol Red (48 months)
- P0877** RPMI 1640 w/ stable Glutamine w/ 25 mM HEPES w/o Phenol Red (48 months)
- P0880** RPMI 1640 w/ L-Glutamine w/o Na Bicarbonate w/o Phenol Red (48 months)
- P0883** RPMI 1640 w/ L-Glutamine w/o Na Bicarbonate w/o Glucose (48 months)

Salts, Salt Solutions and Buffers

The irrigating buffers and salt solutions are sterile physiological balanced solutions intended for use in the maintenance of mammalian cells where a chemically defined, balanced salt solution provides an environment that will maintain the structural and physiological integrity of cells in vitro. These buffers and solutions are not cell culture media. They are composed of a phosphate buffer system, sodium chloride to adjust the osmolarity and perhaps sugar and metal ions for a short time for nutrition and stabilisation of morphology. For applications where Ca^{2+} and Mg^{2+} ions interfere with enzyme activity e.g. Trypsin, use the modified HBSS products.

SALTS

- P2006 Cupric Sulphate Pentahydrate
- P2010 Ferric Nitrate Nonahydrate
- P2015 Ferric Sulphate Heptahydrate
- P2025 Magnesium Sulphate Anhydrous
- P2029 Magnesium Sulphate Anhydrous
- P2065 Sodium Chloride
- P2069 Sodium Phosphate Monobasic Anhydrous
- P2073 Sodium Phosphate Monobasic Dihydrate
- P2076 Sodium Phosphate Dibasic Anhydrous
- P2079 Sodium Phosphate Dibasic Heptahydrate
- P2088 Zinc Sulphate Heptahydrate
- P2090 Calcium Chloride Dihydrate
- P2092 Calcium Chloride Anhydrous
- P2099 Calcium Nitrate Tetrahydrate

Salts, Salt Solutions and Buffers

SALT SOLUTIONS/BUFFER LIQUID 1X CONCENTRATE

| | |
|-------|---|
| L0180 | HEPES Buffer 1M |
| L0600 | Earle's Balanced Salt Solution (EBSS) w/o phenol red w/o Ca w/o Magnesium Sulphate |
| L0601 | EBSS w/o Ca w/o Magnesium Sulphate |
| L0602 | EBSS w/Ca w/Magnesium Sulphate |
| L0605 | Hank's Balanced Salt Solution (HBSS) w/o Ca w/o Mg w/o phenol red |
| L0606 | HBSS w/Ca w/Mg w/Na Bicarbonate w/phenol red |
| L0607 | HBSS w/o Mg w/o Ca w/Na Bicarbonate w/o phenol red |
| L0608 | HBSS w/o Na Bicarbonate w/phenol red |
| L0609 | HBSS w/o Mg w/o Ca w/o Na Bicarbonate w/phenol red |
| L0611 | HBSS HBSS w/o Mg w/o Ca w/ Na Bicarbonate w/phenol red |
| L0612 | HBSS w/o phenol red |
| L0615 | Dulbecco's Phosphate Buffered Saline (DPSS) w/o Mg w/o Ca Chloride |
| L0625 | Dulbecco's PBS w/ Mg w/ Ca Chloride |
| L0636 | Alsever's Solution |
| L0640 | Sodium Chloride Salt Solution 0.85% |
| L0642 | Sodium Pyruvate 100mM |
| L0643 | Potassium Chloride 0.07mM |
| L0680 | Sodium Bicarbonate 7.5% |

SALT SOLUTIONS/BUFFER LIQUID 10X CONCENTRATE

| | |
|-------|---|
| X0112 | Earle's Balanced Salt Solutions (EBSS) 10X concentrate |
| X0113 | EBSS 10X concentrate, w/o Na Bicarbonate, w/o Ca w/o Mg |
| X0507 | Hank's balanced Salt Solutions (HBSS) 10X w/o phenol red w/o Ca w/o Mg, w/o Na Bicarbonate |
| X0509 | HBSS 10X concentrate w/o Na Bicarbonate, w/phenol red |
| X0510 | HBSS 10X concentrate w/o phenol red w/o Ca w/o Mg w/Na Bicarbonate |
| X0512 | HBSS 10X concentrate w/phenol red w/o Ca, w/o Mg |
| X0513 | HBSS 10X w/o Ca w/o Mg w/o Na Bicarbonate w/phenol |
| X0515 | Phosphate Buffered Saline (PBS) 10X concentrate w/o Mg w/o Ca |
| X0520 | PBS 10X concentrate |

SALT SOLUTIONS/BUFFER POWDER

| | |
|-------|---|
| P0153 | Hanks Buffered Salt Solution (HBSS) w/o Ca w/o Mg w/o Na Bicarbonate |
| P0154 | HBSS w/Ca w/Mg w/o Na Bicarbonate |
| P0750 | Dulbecco's Phosphate Buffered Saline (DPBS) w/o Na Bicarbonate w/o Ca w/o Mg |
| P0751 | DPBS w/Ca w/Mg |
| P5455 | HEPES |

Antibiotics



The use of Antibiotics is a helpful tool in the cell culture field or where the fluids have to be conserved and prevented from bacterial contamination. Most of the antibiotics suppress the growth of microorganisms by blocking an anabolic pathway.

- L0009** Amphotericin B (frozen)
- P4030** Amphotericin B frozen. Effective against yeast and other fungi. Suggested concentration is 2.5mg/L Toxic concentration 30mg/L stability
- L0010** Antibiotic-Antimycotic 100X (frozen)
Effective against the most common contaminants including yeast, fungi and bacteria. The recommended working concentration is 10ml/L
- L0011** Gentamycin Sulphate 10mg/ml (frozen)
- L0012** Gentamycin Sulphate 50mg/L (frozen)
- P4020** Gentamycin Sulphate (powder)
- L0013** Glutamine-Gentamycin (frozen)
- L0014** Glutamine-Penicillin Streptomycin (frozen). Effective against gram positive and gram negative bacteria. The working concentration is 10ml/L
- L0015** G-418 (Geneticin) Sulphate 50mg/L (frozen)
- P0017** G-418 (Geneticin) Sulphate (powder)
- L0017** Polymyxin B Sulphate 30.000U/ml (frozen)
Effective against gram positive and gram negative bacteria.
The working concentration is 10ml/L
Recommended use 300U/ml, min 6.000USB U/mg
Stable at 37oC: 5 days
- L0018** Penicillin-Streptomycin Solution 50X (frozen)
- L0022** Penicillin-Streptomycin Solution 100X (frozen)
Effective against most gram positive and gram negative bacteria
The recommended working concentration is 100,000 I.U.
penicillin/100.000ug streptomycin per litre
- L-D16** Nanomycopulitine, in DMEM w/25mM Hepes w/L-Glutamine
- L-R16** Nanomycopulitine, in RPMI 1640 w/o L-Glutamine
- L-I16** Nanomycopulitine, in Iscove's Modified Dulbecco's Medium w/o L-Glutamine w/o Hepes
- L-X16** Nanomycopulitine, concentrate 20X
To protect and clean cell cultures of bacterial and mycoplasma contamination Nanomycopulitine, has a wide spectrum of activity against gram negative and gram positive bacteria and also others like Chlamydia, mycobacteria and a broad range of Mycoplasma, Nanobacteria and bacterial L-Forms. Nanomycopulitine, is active and kills bacteria in all phases of the bacterial life cycle.
Stable at 37oC: >20 days
- P0025** Streptomycin Sulphate (powder). Effective against most gram positive and gram negative bacteria by inhibiting initiation and causing a misreading of rRNA during protein synthesis.
The recommended working concentration is 100mg/L
Stable at 37oC: 3 days, in liquid
- P4010** Geneticin Disulphate (powder)
Recommended use: 100-800ug/ml
Stable at 37oC: 8 days, in liquid

Vitamins

The overall potential of vitamins not only in the field of research but also for therapeutic benefits of humans was realised at an early stage. Cell biology discovered the great importance of Vitamins for In Vitro cultivation of cells. It was discovered that mammalian cells are not able to synthesise this class of biological compounds and the artificial basic cell culture media containing sugars, salts and amino acids were supplemented with the different isolated vitamins. These formulations were later intensified. The development of nutritional media without the need for sera as a source of undefined growth promoting components ensured that all vitamins are now introduced into media formulations. It has become more and more clear that each cell type needs its individual medium as it is diverted from the different qualities of different organs from different species.

P3010 L-Ascorbic Acid (Vitamin C)

P3020 D-Biotin (Vitamin H)

P3030 Calcium D-Pantothenate

P3040 Choline Chloride

P3050 Folic Acid

P3060 Myo-Inositol

P3070 Nicotinamide

P3080 Nicotinic Acid

P3090 Pyridoxal Hydrochloride

P3100 Pyridoxine Hydrochloride

P3110 Riboflavin

P3120 Thiamine Hydrochloride

P3130 Vitamin B12

P3140 Vitamin A acetate

P3150 Vitamin E Acetate

Amino Acids

Amino acids are the alphabet of protein structure and determine many of the important properties of proteins. Beside the 20 amino acids found in building blocks of proteins, many additional biologically occurring amino acids serve other functions in the cells. Different organisms vary considerably in their ability to synthesise amino acids and therefore require these amino acids preformed in the diet, produced by plant or bacteria. These are called essential amino acids. Man and the Albino rat can make only 10 of the 20 common amino acids. The non-essential amino acids can be synthesised directly by the organism but they are also added to cell culture media to save energy for the cells.

| | |
|-------|---|
| P1001 | L-Alanine |
| P1002 | L-Arginine, free base |
| P1003 | L-Arginine Hydrochloride |
| P1004 | L-Asparagine Anhydrous |
| P1005 | L-Asparagine Monohydrate |
| P1006 | L-Aspartic Acid |
| P1007 | L-Cysteine, free base |
| P1008 | L-Cysteine Hydrochloride Monohydrate |
| P1009 | L-Cysteine |
| P1010 | L-Cysteine Dihydrochloride |
| P1011 | L-Glutamic acid |
| P1012 | L-Glutamine |
| P1013 | Glycine |
| P1014 | L-Histidine |
| P1015 | L-Histidine Hydrochloride Monohydrate |
| P1016 | I-Isoleucine |
| P1017 | L-Leucine |
| P1018 | L-Lysine Monohydrochloride |
| P1019 | L-Methionine |
| P1020 | I-Phenylalanine |
| P1021 | L-Proline |
| P1022 | L-4-hydroxyproline |
| P1023 | L-Serine |
| P1024 | L-Threonine |
| P1025 | L-Tryptophan |
| P1026 | L-Tyrosine |
| P1027 | L-Tyrosine Disodium Salt |
| P1028 | L-Valine |
| P1029 | N-Acetyl-L-Alanyl-L-Glutamine, stable Glutamine |
| P1040 | L-Ornithine Hcl |
| P1060 | DL-Alanine |
| P1061 | DL-Arginine |
| P1062 | DL-Arginine Monohydrochloride Monohydrate |
| P1063 | DL-Glutamic Acid monohydrate |
| P1064 | DL-Histidine Monohydrochloride monohyd |
| P1065 | DL-Leucine |

Amino Acids

| | |
|-------|--|
| P1067 | DL-Lysine monohydrochloride |
| P1070 | DL-Phenylalanine |
| P1075 | DL-Proline |
| P1085 | DL-Tryptophan |
| P1220 | D-Alanine |
| P1240 | D-Arginine, Free base |
| P1270 | D-Aspartic Acid |
| P1273 | D-Cysteine, free base |
| P1274 | D-Cysteine, Hydrochloride, monohydrate |
| P1276 | D-Cysteine |
| P1280 | D-Glutamic Acid |
| P1283 | D-Glutamine |
| P1290 | D-Histidine |
| P1310 | D-Leucine |
| P1320 | D-Lysine Monohydrochloride |
| P1330 | D-Methionine |
| P1360 | D-Phenylalanine |
| P1390 | D-Proline |
| P1400 | D-Tryptophan |
| P1410 | D-Tyrosine |
| P1420 | D-Valine |

Others

| | |
|-------|---|
| L0040 | Colcemid 10ug/ml in PBS (Demecolcin) |
| L0541 | Phenol Red soln 0.5% |
| L0560 | Lymphosep (Density 1.077) Lymphocyte Separation Media |
| L0645 | Beta-Mercaptoethanol |
| L0909 | Trypsin 0.25% in PBS w/o Ca w/o Mg w/ Phenol Red |
| L0910 | Trypsin 0.25% in PBS w/o Ca w/o Mg |
| L0930 | Trypsin EDTA 1X w/ Phenol Red |
| L0950 | Trypsin 1X in Puck's Salts |
| L0970 | Cell Culture Water, pyrogen free (<1pgr/ml) (WFI) |
| L0990 | Trypan Blue 0.5% soln |
| P5648 | Phenol Red Sodium Salt |
| P5810 | Sodium Pyruvate |
| P5922 | Thymidine |
| P5933 | Tryptose Broth |
| P5944 | Tryptose Phosphate Broth |
| P6150 | BSA standard quality, lyophilised |
| P6151 | BSA high cleaned, cell culture tested |
| P7500 | Liposorb |
| X0550 | L-Glutamine 100X 200mM |
| X0551 | L-Glutamine stable 100X 200mM |
| X0915 | Trypsin 2.5% in PBS |
| X0930 | Trypsin-EDTA 10X |
| X0960 | Trypsin 2.5% 10X in Puck's salts |

Company Information



Biosera supplies high quality cell culture products to cell culturists around the world. US sales are handled from our office in Miami, Florida and all other sales worldwide from East Sussex, UK. Our proximity to serum sources enables us to provide a wide range of sera of certificated origin. Our experience in supplying biological and perishable materials allows us to deliver our high quality products in the appropriate condition to customers near and far.

INTERNATIONAL ACTIVITIES

Biosera customers can now be found in every corner of the globe with direct sales focused in the US and UK and the use of a network of distributors in over 35 other countries. Your local Biosera offices are listed below and please see our website for our up to date Distributors details.

UK

1, Acorn House
The Broyle
Ringmer
East Sussex
BN8 5NN
United Kingdom

Tel: +44 1273 814466

Fax: +44 1273 815228

USA

7205 NW 68 St
Suite 14
Miami
FL 33166
USA

Tel: +1 305 888 3141

Fax: +1 305 888 4438

Toll free: 1-888-246-3566

1-888-246-0044

info@biosera.com

www.biosera.com